



## 2022 Medical Student Summer Research Fellowship Application

Submit completed application here: <https://forms.office.com/Pages/ResponsePage.aspx?id=-uZkNr1HpkWWclxPCA-MprR4tqnuUOhCiZsZQaLoxutUQU4yQjVQMDk2SEtZWUNHWVVGvKjQVEIWNC4u>

### Inquiries:

Office of Student Affairs, C/o Karen Shulik, Tel: 215-991-8395 / [klu23@drexel.edu](mailto:klu23@drexel.edu)

Name

Address

City  State  Zip Code

Phone Number

Drexel E-mail

Undergraduate Institution: location, field of study and date of baccalaureate degree:

Graduate or Professional School: location, dates attended, field of study and advanced degree (if applicable):

Previous research experience (if applicable):

Project Title

Name of Faculty Sponsor	<input type="text"/>		
Affiliation/Dept., Institution of Faculty Sponsor	<input type="text"/>		
Email of Faculty Sponsor	<input type="text"/>		
Project Start Date	<input type="text"/>	Project End Date	<input type="text"/>

In addition to this form, you must also submit a separate research proposal to apply. **The research proposal should be written by the student with input from the faculty sponsor. The proposal must address the following 4 components. Please follow the outlined format below:**

- A. Introduction to the Problem** – Why is the research needed? How does it contribute to the field of study?
- B. Hypothesis** – State concisely the hypothesis to be tested or specific goal of the project.
- C. Experimental Design**
  - a. Include 1 to 2 Specific Aims (as needed)
  - b. Briefly describe the rationale and methodology to be used to accomplish each specific aim of the project. Be sure to include the number of patients and data to be collected in a clinical study
  - c. Indicate how the data will be collected and analyzed and state your anticipated results.
- D. Role of the Student Researcher** – Be specific.

The length of the proposal should not exceed two pages (11 font Arial or New Times Roman, 0.5 inch margins, no more than 6 lines per inch). References for the research proposal must be listed on a separate page.

Selected students should expect to spend six weeks during the summer working full time (minimum of 40 hours per week) on projects with their faculty sponsors. Fellows will be paid stipends of \$2,500 and can receive no other University-funded income or outside funding for the same project during this period. A fellow cannot also participate in other Drexel sponsored funded projects, such as the Bridging the Gaps program. Research completed through the MSSRF program can count as the year 1 summer program requirement for the [Medical Scholars Program](#).

In signing this application, the fellowship recipient agrees to present a poster summarizing their research project at the College of Medicine’s Annual Research Day, “Discovery Day 2022.”

As you work with your mentor to prepare your fellowship application, please note that the process for obtaining IRB approval for projects involving Human Subjects Research can take time. Please consider this as you develop a timeline for completion of the proposed work. There will be additional Drexel University IRB requirements that med students participating in Human Subjects Research will need to fulfill before beginning their research (more instructions to follow).

At this time, it is difficult to predict what COVID-19 safety precautions and restrictions may be in place in June 2022 at the various training sites. We will monitor the situation in the coming months. If you are unable to access the research lab or clinical site to complete your project, we will give you an opportunity to submit a modified plan to work remotely. Please try to keep this possibility in mind when developing your project.

In signing, the faculty sponsor indicates a commitment to providing guidance, facilities and supplies necessary to carry out the research proposal, and to covering the cost of printing a **Discovery Day poster**. The sponsor also accepts the responsibility for assuring the quality of the student’s research experience. A description of expectations and guidance is included at the end of this application document. Faculty members are **not** allowed to have multiple medical students to apply for one position. Support for two students working with the same mentor may be considered depending on the number of applications received and availability of funds.

Student Signature	<input type="text"/>
Faculty Signature	<input type="text"/>

Please submit completed applications via email no later than **Monday, February 14, 2022** to Karen Shulik in the Office of Student Affairs & Career Advising. Students and their sponsors will be notified of the outcome of their application by **Monday, February 28, 2022**.

### **Medical Student Summer Research Fellowship Project Checklist**

*Adapted from the NIH "[Write Your Research Plan](#)"*

- ☐ My research proposal follows the outline format provided so reviewers can easily spot my aims and other key terms
- ☐ I kept within the 2-page limit (not including references)
- ☐ I developed and wrote my research proposal in consultation with my mentor
- ☐ My potential faculty mentor has signed my application form and has confirmed I am the only student they are sponsoring through the Medical Student Summer Research Fellowship
- ☐ My title is specific, indicating the research area and goals of my project
- ☐ My project is hypothesis driven
- ☐ I reviewed my research proposal thoroughly for spelling and grammatical errors

#### **A. Introduction to the Problem**

- ☐ I briefly reviewed the background including relevant literature on the specific topic and stated why this problem needs to be studied and what is the significance of the problem
- ☐ My proposal demonstrates my awareness of gaps, roadblocks, and research underway in the field
- ☐ I tie the project to my preliminary data and other new findings in the field
- ☐ I give a rationale for choosing the topic and approach

#### **B. Hypothesis**

- ☐ Based on the literature and our preliminary studies (or previous studies by the group I am working with), I explicitly stated my research question/hypothesis and how we propose to address through the following specific aims
- ☐ My hypothesis is logical but not obvious

#### **C. Experimental Designs**

##### **a. Specific Aims/Objectives** (1-2—one at a time):

- ☐ My aims are logical and can test my hypothesis

##### **b. Rationale and Methodology**

- ☐ Short Rationale/Objective(s) of the study (e.g. "To better understand how...." "To determine whether there is a correlation between x and y or to enroll patients in a clinical trial"); outcomes analysis—state how it relates to the overall hypothesis
- ☐ Research design (experimental approach) and methods. State what data will be collected or what measurements will be taken and how this will be done (e.g. chart reviews [how many cases are available]), briefly describe wet lab assays
- ☐ My methodology is logical and will produce meaningful data

##### **c. Explanation of how data will be collected and analyzed**

- ☐ Data analysis (including # of patients or samples that will be included in the study)
- ☐ Discussion of anticipated outcome and implications
- ☐ Ethical considerations—IRB, IACUC—Human subjects and Animal Use approval are required, if applicable

#### **D. Role of the Student Researcher**

- ☐ I explained my role and my responsibilities in the research project
- ☐ I addressed where this project is in the IRB approval process. Pursuing IRB approval prior to the summer is encouraged.

*N.B. In general, projects that are entirely literature review will not be funded. However, research in disciplines that are exclusively based on literature review, such as those in the medical humanities, ethics, medical informatics, will be considered provided they are hypothesis driven and result in production of a high-quality, potentially publishable paper, which reflects original analysis or synthesis and makes a serious contribution to scholarship in the field. Such projects require close mentorship by a qualified faculty member, with conferences at least twice weekly.*

## **2022 Medical Student Summer Research Fellowship Mentor Expectations and Guidance**

Faculty mentors for the recipients of our Medical School Summer Research Fellowships commit to providing guidance, facilities, and supplies to support our Fellows and accept responsibility for assuring the quality of the student's research experience. The following information is provided to assist Faculty in mentoring this year's class of young investigators.

1. The goal of this training experience is to provide first year medical students an opportunity to engage in hypothesis-driven clinical and/or basic science research under the guidance of Faculty at Drexel or one of our affiliated clinical sites.
2. It is anticipated that students will complete their research projects between June 1, 2022 and August 15, 2022. There is flexibility in start and end dates to accommodate schedules with mutual agreement between student and mentor. During the 6-week period, students are expected to work full time (minimum of 40 hours per week).
3. The training period is relatively short and research projects are often part of the effort of a larger group of investigators. Nevertheless, to maximize this training opportunity, it is essential that Fellows are immersed in all aspects of the project from hypothesis development and experimental design through the collection, analysis, and interpretation of data. The following guidance for mentors will help meet these objectives and facilitate interactions between the Fellow and the team of investigators.
  - a. At the start of the summer, mentors should meet with their students to review the scope of the project and to discuss any new aspects of the project and/or required modifications since the submission of the research proposal.
  - b. We ask that mentors set goals and expectations for the student early during the training period. This includes establishing a work schedule (hours on-site), attendance at lab or group meetings, submission of progress reports, lines of communications, deadlines, etc.
  - c. At the start of the fellowship, the mentor should clearly communicate expectations for the student to achieve authorship on any abstracts or manuscripts resulting from the project.
  - d. Mentors should introduce the summer research Fellow to all members of their research team and explain how the student's role will integrate with the roles and responsibilities of other members. If there are other members of the mentor's research team who will provide oversight of the student throughout the Fellowship period, please notify the student at the start of the Fellowship period.
  - e. Mentors should conduct an initial meeting with students to review all key aspects of regulations and protocols governing the conduct of clinical and basic science research related to the student's project to ensure compliance. Topics may include general laboratory safety, biosafety regulations, vertebrate animal use and human subject safety, welfare, and privacy considerations.
  - f. Mentors and student Fellows should meet once weekly to discuss progress, problems, action plans, and results.
  - g. We encourage mentors to engage students in discussions and meetings with the larger team of researchers and clinicians conducting related research.
  - h. Near the end of the training period, provide an opportunity for the student to present the results of their summer research project to the investigative group and discuss opportunities to present the research at any relevant scientific meetings.

- i. Upon completion of the project, mentors should meet with the student to discuss the training experience, future directions for the project and opportunities for poster presentations and/or publications.
4. During the course of the training period, Fellows will be expected to attend a series of talks on the Responsible Conduct of Research. It is anticipated that these will be 1-2 hours each, held once per week and cover topics including Overview of the Responsible Conduct of Research, Rigor and Reproducibility, Human Subjects Research, Vertebrate Animal Research, Notebooks/Record Keeping.
5. **Discovery Day**, the annual research day for graduate and medical students in Drexel University College of Medicine, will be held in October 2022. As part of this day-long event, all recipients of Medical Students Summer Research Fellowships are expected to present a poster summarizing the results of their study. Mentors are expected to provide support for the preparation of this poster presentation.
6. In an effort to continually improve the Medical Student Summer Research Program, both mentor and Fellow will be asked to complete an evaluation of the summer research experience including strengths, weaknesses, and opportunities for improvement.
7. If you have any questions now or through the summer, please reach out to Dr. Karen Berkowitz ([kmb354@drexel.edu](mailto:kmb354@drexel.edu)) or Karen Shulik ([klu23@drexel.edu](mailto:klu23@drexel.edu)).